

**ABSTRACT**

An armature unit is made up of a matrix of armature coils each having a rectangular current path. A magnetic pole unit is made up of thrust generating magnets arranged in a matrix at arrangement periods each of which is an integral multiple of each of the arrangement periods at which the armature coils are arranged and having a rectangular magnetic pole surface, interpolating magnets for reinforcing the magnetomotive force, and a magnetic member. A mover is supported by air levitation above a guide surface by the pressure of pressurized gas, and the current supplied to the armature coils is controlled, thus driving the mover. An armature coil is housed in a closed space within a base, and a coolant is supplied from a cooling device into the closed space, thereby cooling the armature coils. Therefore, a substrate mounted on a substrate table integrated with the mover is precisely positioned.

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